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day furnished a mid-day lunch to the members. An appropriate resolution of thanks was adopted.

The following general events added greatly to the meeting:

1. The informal smoker at the Town and Gown Club on Thursday evening.

2. The formal opening and dedication of Rockefeller Hall, the magnificent new Physical Laboratory of Cornell University, on Friday afternoon, with short addresses by President J. G. Schurman, Professor E. L. Nichols, Dr. Elihu Thomson, Dr. W. H. Welch (the president of the association) and a letter from Professor W. A. Anthony, read by Professor E. Merritt.

3. An address on Saturday evening by Professor Henry S. Carhart, of the University of Michigan, on 'The South African Meeting of the British Association for the Advancement of Science,' illustrated by a most excellent series of lantern slides.

4. A reception on Monday afternoon by Dr. and Mrs. Andrew D. White at their residence on East Avenue.

5. A public address on the recent California earthquake by Professor J. C. Branner, vice-president of Stanford University, given under the auspices of the local chapter of Sigma Xi in commemoration of the twentieth anniversary of the founding of the society. This was immediately followed by a Sigma Xi banquet, which was largely attended.

There were during the meeting, both within and outside of the council, various discussions of the relations of the association and of the affiliated societies. The only resolutions passed by the council bearing directly upon this matter follow:

*Resolved*, That the secretary of each section be required to prepare for the New York meeting a program of general interest for at least one session of his section.

*Resolved*, That the secretaries of the sections be requested to confer with each

other, and with the secretaries of affiliated societies, regarding the relation of programs for the New York meeting, and

Further, That the sectional committees be empowered to turn over technical papers to the technical societies, and

On motion, the permanent secretary was instructed to prepare a list of members of the association who belong to the affiliated societies accepted as possessing proper qualifications, and to submit these names to the council at the New York meeting, with the recommendation that they be elected as fellows.

The social features of the meeting were unusually pleasant; and, although there was no central rallying point for all the scientific people in attendance, except the luncheon place at 1 o'clock, the opportunities for social converse were many.

The Ithaca meeting will be remembered by those who attended it as one of moderate size, thoroughly successful as to number and quality of papers presented, characterized throughout by harmonious relations, especially notable for pleasant and profitable excursions, and given a tone of peculiar charm by scenic surroundings unrivaled by those of any other college campus in the United States.

The addresses made at the opening general session in Barnes Hall on Friday, June 28, are appended to this report.

JOHN F. HAYFORD,  
*General Secretary.*

The first general session of the association was held in Barnes Hall, Cornell University, at 10 o'clock on Friday morning, June 29, 1906. The president of the association, Dr. William H. Welch, after calling the meeting to order, introduced Dr. J. G. Schurman, president of Cornell University, who delivered the following address of welcome:

*Ladies and Gentlemen:* I have very

much pleasure, on behalf of the university under whose auspices you meet, to extend a cordial welcome to the members of the American Association for the Advancement of Science, to the affiliated societies and to the friends who accompany them here. We feel it a great honor to have under our roof so large a gathering of distinguished scientists from all parts of the country.

I notice that you have timed your meetings so that you may be home by the Fourth of July to properly celebrate that day. I was thinking that if you practised on this occasion the scientific habit of analysis, and asked yourselves what was especially worthy of celebration in the day, you would perhaps sum it up under two or three heads. One of them undoubtedly would be the fact of a great nation of freemen governing themselves. The second, I think, would be the splendid mechanisms for the production and transportation of economic commodities which this republic has developed since the first Declaration of Independence. And I think the third would be the unusually high level of material comfort which the great majority of our population enjoy. You see I have made a close connection between the third of July and the fourth. If I am right in the analysis I have made, and have described correctly the three most important things that this republic has to celebrate as each fourth of July returns, we can recognize that two of them, at least, are the results of the labors of scientists. We can not, perhaps, attribute to scientists a larger share than we attribute to other citizens in the bringing out and maintaining of a free government, but if we have our splendid system of economic production, and if the tide of material comfort runs higher here than anywhere else on the globe, it is due, first of all, to the abundant resources of our country, and secondly to the discoveries and investigations for which scientific men are responsible. And when

I say that scientific men have in this way helped to produce two out of the three most important things which characterize our own republic, I do not feel that I have exhausted their highest work, for science has during the last hundred years revolutionized the civilization of the world. It has in other countries, as in our own, increased material comforts, multiplied inventions and extended knowledge. It has introduced new modes of thought and new standards of evidence. The civilization of the earlier centuries was colored and molded by hearsay and tradition, whereas one of the most splendid achievements that has come to our age through the advance of science is the resting of knowledge on evidence, and on theory and hypothesis only as they are maintained by it. No one who has studied the thought and considered the progress of the world in its highest spiritual aspects can feel that I have stated the fact too strongly in saying that science has revolutionized the civilization of the past—first of all, that of Europe and of America, and later that of Asia also.

So, ladies and gentlemen, we at Cornell University feel it a great honor to have in our midst for a number of days the representatives of those men and women who by the achievements of their labors and intellects are really shaping the advance of nations and molding the civilization of mankind. I am not certain that we can adequately show you the honor which we feel. We labor under a certain disadvantage, for it is now vacation and many members of our faculty have left their homes, but what it was in our power to do we have done. We have placed the facilities of the university here freely at your disposal. Ithaea is not as well provided with hotels as some of the larger cities, and so to supplement our local resources in that regard we have opened Sage College, and the graduates and undergraduates who control

fraternity houses have also thrown them open. Our members will be ready, as the announcement explains, to take excursions to different parts of the surrounding country. We believe that we have here the most beautiful and most romantic college or university campus in the world. What lies in our power we are anxious to do. Our trustees have arranged for a luncheon to be served to you daily in the University Armory during your stay. I hope, Mr. President, you will not expect too much of us. We have done the most we could in the way of entertainment, and we hope you will accept the will for the larger deed which might have been possible in Washington, Baltimore or New York.

Ladies and gentlemen, once more I express the great pleasure we feel in having you with us, and in the name and on behalf of Cornell University I put what we have at your free disposal.

President Welch then introduced the Hon. Bradford Almy, mayor of Ithaca, who welcomed the association to the city in the following address:

*Mr. President, and Ladies and Gentlemen:* The people of this city rightfully feel that this is an important event with them. They feel that Cornell University, the institution in which they take so much pride, is the cause of their having the pleasure of your visit to our city at this time. That an organization so eminently distinguished as the American Association for the Advancement of Science, composed of individual leaders in thought, labor and achievement along all the lines that lead to the progress, welfare and happiness of our people, should assemble in Ithaca for their deliberations is a compliment which we sincerely appreciate and for which we are very glad.

The profound sense of gratitude which we all feel for the heroes, self-sacrificing in their labors as pioneers of science, who

caused a ray of light to shine here and there in the utter darkness, may perhaps be a measure of the feelings which we have for you men and you women who are laboring along lines of work so persistently followed and so diligently wrought out for the benefit of mankind and the civilization of the world. We can all remember, for it was not so very long ago, when science and religion were believed to be at war with each other. That thought delayed its progress for a time, but science has made great advance during the years since that idea has left the minds of men. Happily, those times are past, and to-day science is regarded as more than the handmaid of religion. In bidding you the hearty welcome to our little city, which I have the honor and pleasure of extending to you on behalf of our people, I bid you Godspeed in the noblest work that can engage the thoughts and energies of mankind. At the same time, while we are conscious that the advancement in the last fifty years has been so great and so strengthens the courage and inspires the zeal for future work, we realize how diminutive are the regions of the known compared with the vast, untrodden wilderness on the border land of which you stand.

In closing, let me express the wish that you may have as prosperous a congress here as you have expected, that you may enjoy your visit as much as we hope you will and that you may go away with pleasant recollections of us and of Ithaca.

President Welch made response to the addresses of welcome, as follows:

*Ladies and Gentlemen:* In behalf of the members of the association, of our guests and all here present, I wish to express to you, President Schurman and Mayor Almy, our very cordial appreciation of the words of welcome which you have given us. This is the first meeting of the association in Ithaca. It is also a renewal of an old

custom of holding a midsummer meeting, and I do not know where that renewal, somewhat experimental, of the old custom could be inaugurated under more favorable conditions than in this place. Where could this association feel more at home than here at this home of learning and of science? It must, I think, be a satisfaction to the members at Cornell University to be enabled to show to their fellow members in this association the splendid opportunities which exist and the evidences of the great work done here, and it is equally a pleasure and source of profit to us to enjoy this privilege. We know that this is one of the great and leading universities of the country; that when it was founded Cornell University was enabled to do a work that was highly distinctive and significant and which marked a great advance in higher education in America, and that this position of leadership it has never lost. It is a great delight to come at this time of the year to this charming town and enjoy the wonderful beauties of nature in this region. They appeal not only to lovers of science, but to lovers of nature as well, and it would seem that the study of natural history must be stimulated by such surroundings as exist here. So, I say, we are particularly fortunate in coming to Ithaca and to Cornell University at this time.

The American Association for the Advancement of Science has had a very useful and honorable history. At the time it was founded and for many years afterward it was possible for a single association to represent in a very definite and concrete way all the existing natural and physical science in this country. During this period the scientific activities of the country were represented more adequately and comprehensively in this association than in any other body. But as time went on, science in its various branches extended and grew, conditions changed, and it became evident

that it was necessary for the association to adjust itself to those new conditions, the main one being the specialization of scientific work. That specialization has been a great instrumentality in the progress of science throughout the world, but nevertheless it has certain disadvantages and even dangers of its own. I believe that the highest function of this association is to try to minimize to the greatest possible extent the dangers that may arise from the minute subdivision of scientific research. As its name implies, this association represents a central body for the advancement, and, it may be added, the diffusion and the organization of science in America. It may be at times a little burdensome for active workers in one department of science to feel interested in the central organization, but I conceive it to be their highest duty to do so. They should consider the interests of science as a whole in this country, as well as those of their particular branch of science, for unless the whole tree of science flourishes the branches will suffer.

This association represents, as it were, an association of various special scientific societies, perhaps more than an association of various scientific workers. It is necessary to have this coordination of societies in order to bring together the great body of scientific workers throughout the country, but in the plan of our organization the affiliated societies in no sense lose their autonomy and it is essential that they should not. The centers of scientific activity in this country are not concentrated in a few points, as in most European countries, and it is believed that this plan of organization best meets the special conditions of science in America.

It is very important, under our form of government, that there should be a central authoritative voice which speaks for science. How many questions there are, as has been suggested by President Schurman,

relating to the highest welfare of society which can be solved only by science, and how important it is that workers in kindred subjects should be brought into contact with each other! There are matters of education, matters of public policy and matters of research in all departments of the government and of national life that sustain very close relations to the opinions of scientific men, and it is, therefore, of first importance that there should be a body which can express in an authoritative and representative way the scientific opinion of the country.

This experiment of renewing the mid-summer meeting indicates in a measure the great growth in membership and in influence of this association. In so doing, of course there is no intention of abandoning the meetings in the winter. It was necessary, in bringing about a proper adjustment of the work and aims of the association to the specialization of science as represented in the various affiliated societies, to adopt the plan of a winter meeting, but the association while gaining much undoubtedly lost something by it. Certain members, desirable to have with us, were unable to attend, and the more popular side of the work may have suffered somewhat because of the more special and technical character of the papers presented at the meetings in the winter. There are many, such as school teachers, amateurs and others intelligently interested in natural and physical science, but not actively engaged in research, whose support and interest it is desirable that the association should secure and who formerly attended the summer meetings. It is to be hoped that this effort to renew that kind of work and influence of the association which was expressed in the old days by the midsummer meeting will be successful and this extension of influence can be secured without any impairment of strictly scientific aims.

As I have said, we certainly could not inaugurate the movement under better conditions than at this time and in this place.

This is the first opportunity that I have had to appear in my official capacity before the association, and I wish to express my appreciation of the distinguished honor which was conferred on me at the meeting in New Orleans. The honor is not merely a personal one, but I interpret it as a recognition of medical science as an integral, co-ordinate part of the natural science of this country; and medical science, in my judgment, fully merits this recognition on account of the paths which it has opened up and followed and the great advance which it has made in recent years.

President Schurman has indicated to us the intimate relations which science sustains to the highest interests of society throughout the world, and this condition has been brought about largely through scientific discoveries and their application to useful purposes. It is the glory of medicine that in these later days it has been able to contribute its share, a share not unworthy of its rank among the sciences of man and of nature, toward the advancement of useful knowledge. It has done so partly by recognizing the fact that a large part of medical science is essentially biological science, and that this is not only true of normal anatomy and physiology, but that pathology, the science of disordered structure and function, may be considered and cultivated to a large extent as biological science. This has been one of the reasons for the great advance in medicine. The scientific method, the method of observation, experiment and reasoning, in contrast with the dogmatism, speculation and reliance on authority which for centuries dominated the history of medicine, is recognized to-day by medicine as fully as by any science as the only source of fruitful progress.

But above all, it has been discoveries resulting from the opening up of new paths of investigation which have impressed both the scientific and the popular mind with the importance of medical science. In the last three decades medicine has advanced to a position where it stands as never before in the very closest relations to the highest interests of human society. When you consider the vast accumulations of population in cities, the great industrial activities of modern times, the efforts to colonize and to reclaim for civilization tropical countries and waste lands, such a stupendous undertaking as the digging of the Panama Canal, all dependent in a very direct manner upon our power to control the spread of epidemic and endemic diseases, and that this power has come from the discovery of parasitic microorganisms and the study of their properties and of the manner of propagation of agents of infection, it must be clear to you that medicine, especially preventive medicine, is most intimately related to the progress of civilization and the advancement of human society. So the time has fully come for medical science to stand side by side with other sciences and to be represented with them in this association.

I was expected on this occasion not to make a formal address but simply to reply to the cordial words of welcome which have been extended to us on behalf of the university and of the city. The evil day, fortunately for you and for me, seems by the plan of organization to be put far off, when the incoming president is expected to make his formal address to the association.

I now have pleasure in declaring this fifty-sixth session of the American Association for the Advancement of Science open, and I trust that the sessions of the association and the meetings of the several sections and affiliated societies will be full of interest and profit to all in attendance.

After announcements by the general, permanent and local secretaries, the general session of the association was adjourned.

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JAMES MILLS PEIRCE.

ONE summer morning nearly forty years ago the boys who were to take their examinations for admission to Harvard College were assembling in Harvard Hall to meet the officer in charge of the examinations, Professor James Mills Peirce. As the room filled he walked slowly up and down the platform, his hands clasped behind his back in a manner very familiar to all his friends, looking now at the boys, now out of a window, but saying not a word. One of the boys, now himself a professor in the university, leaning over, whispered in Greek to his friend an adapted line of Homer—"Behold him as he walks, the shortest of them all, but kingliest of men." Such was the impression made then and always by James Peirce on those who were fortunate enough to meet and know him. It is the purpose of the following sketch to give some account of his life together with a short description of the changes which, during his fifty years of service, took place in Harvard University.

James Mills Peirce was born in Cambridge on May 1, 1834. He was the son of Benjamin Peirce, the great mathematician, and Sarah Mills Peirce. The father of Benjamin Peirce, also named Benjamin, was librarian and the first historian of Harvard College. James Peirce's maternal grandfather was a representative in congress, later senator from Massachusetts, and a colleague of Daniel Webster. James Peirce graduated from Harvard College in 1853. The next year he spent at the Law School. In 1854 he gave up the study of law to become a tutor in mathematics in Harvard College. In 1857 he entered the Divinity School, retaining his position as